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The Effect of Debt Ratio on Invesment Opportunity Set

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Article Info

Keywords

Debt
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IDX

Abstract

The Study aims to investigate empirical evidence a proxy of the effect debt on Invesment Opportunity Set (IOS). The study used proxies of IOS such as Ln(Investment), Income to Investment, Investment to Fixed Asset and Fixed Asset to total asset. Research Methodology used linier regression analysis by SPSS IBM 20. The study found that debt decrease investment cash flow eventhough debt increase income and fixed asset. Leverage Firms tend to decrease cash flow for investment eventhough firms interest in buying fixed asset. The beneficial of study such as a mapping the rate of debt dan investment policy, developing scientific of financial and stock trading policy for investor.

Keywords: Debt, Investment Opportunity Set (IOS), IDX

Introduction

Firms have an option to investment including fixed asset and securities investment such as stock and bond. The aims to investment are to improving asset and financial well being thus investment must be profitable. Firms obtain funding sources for investment, often not from internal funds such as retained earnings or cash, but firms take debt funds from externals such as banks or other corporations. Debt financing sources are often considered bad by investors where the cost of debt can reduce the company's income. Good performance in debt management can increase the value of debt to be positive, thereby increasing the company's assets and wealth. To determine the company's investment options or company investment opportunities, an empirical study is conducted regarding the size of the company's investment. Empirical studies related to the effect of debt on investment still cause differences.

Endiana (2015) found that debt has a positive effect on investment decisions, but Sandiar (2017) has a negative effect on investment decisions. Rinofah (2016) found that investment in companies with higher financial constraints than unfinancial constraints means that companies that are in debt will make more investments than companies without debt. Rinofah (2018) found that companies that have difficulty finding sources of funding tend to invest. Based on the existence of a gap in empirical studies related to debt and investment, this study will the effect of debt ratio on investment opportunity set (IOS).

Research is useful for corporate investment management in managing company assets for investment purposes. For investors, the research results can be used for the development and mapping of company investment opportunities on the Indonesia Stock Exchange. For further research, it can develop indicators of investment opportunities that can be further investigated.

The novelty of this research is this study examines the empirical results of investment ratios that can be measured for company investment opportunities due to the debt ratio owned by the company. This study focuses on the proxy test for investment variables that can be used by the company

Method

The study uses annual report data of manufacturing companies listed on the Indonesia Stock Exchange 2015-2019. The sample selection technique uses purposive sampling where sampling uses certain criteria. Samples of manufacturing companies that have financial reports published in full in the 2015-2019 period. The data analysis technique uses multiple regression analysis which examines the effect of the independent variable on

the dependent variable. The statistical test tool uses the IBM SPSS 20. Samples including AISA, ICBP, INDF, MYOR, PSDN, ROTI, SKBM, SKLT, STTP, and ULTJ.

Definition of Variables

Variable of Dependent

Investment opportunity set (IOS)

Investment opportunity set (IOS) uses some proxies of investment ratio such as Log Natural of investment, profitability of investment, investment in fixed asset and fixed asset ratio on total asset. Hidayah (2015) used capital expenditure such as plant, property and equipment to examine IOS. This study uses cash flow in investment to examine investment. The formulas of indicator in investment in the following:

a) Ln (Investment)
   Formula:
   IOS = Ln (Investment)
b) Income to Investment
   Formula:
   IOS = Net Income / Investment
c) Investment to Fixed Asset
   Formula:
   IOS = Investment / Fixed Asset
d) Fixed Asset to Total Asset
   Formula:
   IOS = Fixed asset / Total Asset

Variable Independent

Debt Ratio

Debt ratio uses proxy total debt on total asset. Debt ratio examine the comparation of debt and asset. The higher debt means the lower of equity in total asset.

Formula:

DTA = Debt / Total Asset

Findings and Discussion

Table 4.1 Statistic Deskriptive

	N	Min	Max	Mean	Std.Dev
Trial 1					
DAR	60	0,14	2,89	0,524	0,418
Ln(Investasi)	60	7,68	16,3	13,28	2,008
Income/Invest	60	-39,91	506,74	10,64	72,06
Trial 2					
DAR	60	0,14	2,89	0,5161	0,3844
Invest/FixedAsset	60	0,0027	1,01	0,24477	0,202
FixedAsset/TotalAsset	60	0,17	0,78	0,3828	0,129

Sources: SPSS processed (2020)

Based on table 4.1, the number of sample observations is 60 observations from 10 manufacturing companies in 2014-2019. The data processing system was carried out in 2 trials consisting of the first trial getting an average DAR value of 52.4% and the second trial an average DAR value of 51.61%. The minimum and maximum DAR values for both the first and second trials show a figure of 14% for the minimum and 200.89% for the maximum. In the first trial the company that suffered a loss was included in the calculation. Meanwhile, in the second trial company losses were not included and income data was changed before experiencing losses due to tax payments. The second trial data shows that the average value of fixed assets is 38.28% of total assets, while the average investment value is 24.47% of fixed assets.

The results of Assumption Classic Normality Test and Heteroskedastisity Test Income to Investment

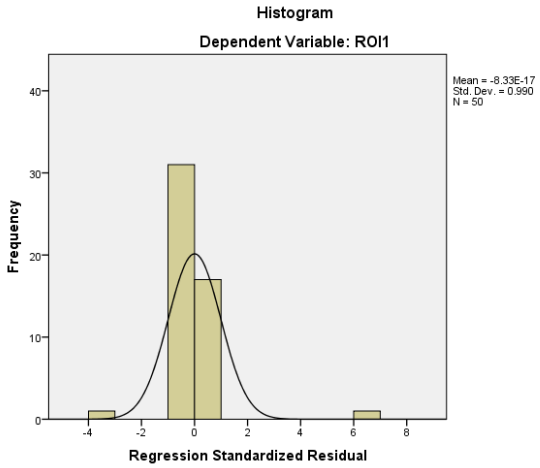

Figure. 1 Normality of ROI (Income to investment)

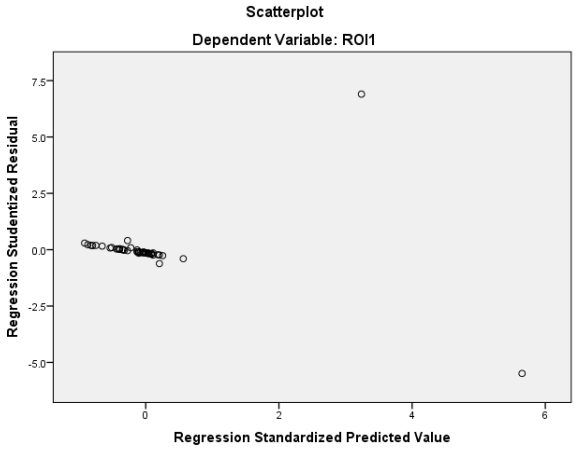

Figure 2 Test of Heteroskedastisity ROI (Income to Investment)

Investasi

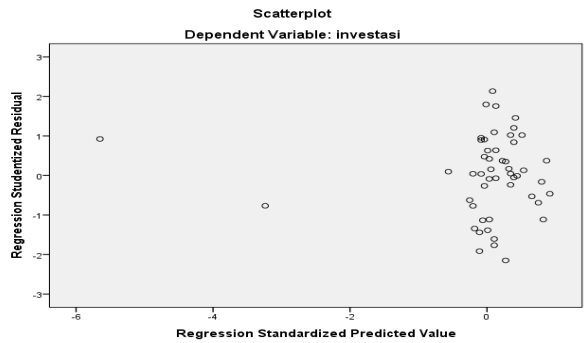

Figure 3 Test Of Heteroskedasty in Investment

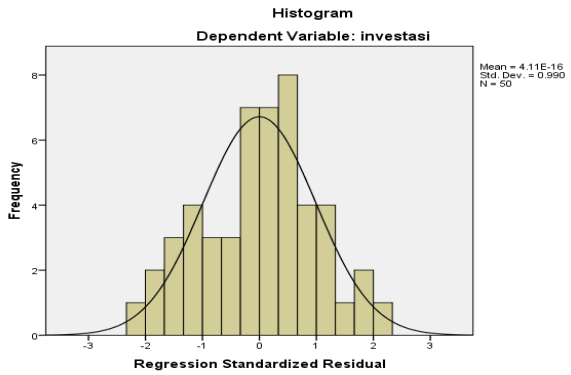

Figure 4 Test of Normality in Investment

Investment to Fixed Asset

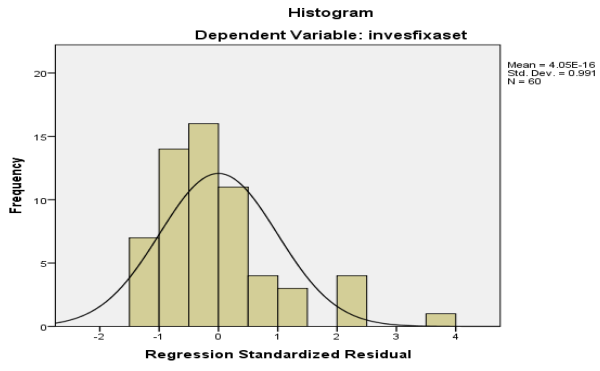

Figure 5. Test of Normality in Investment to fixed asset

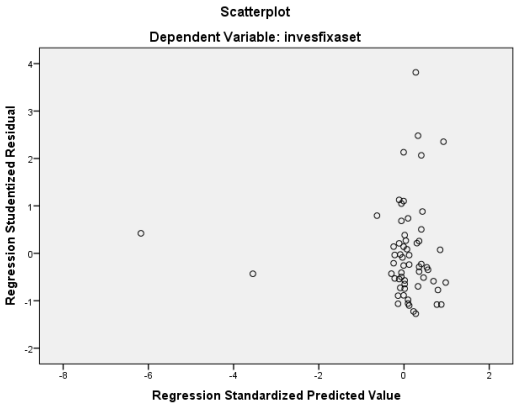

Figure 6. Uji Heteroskedastisitas Invest to fixed asset

Fixed Asset to total asset

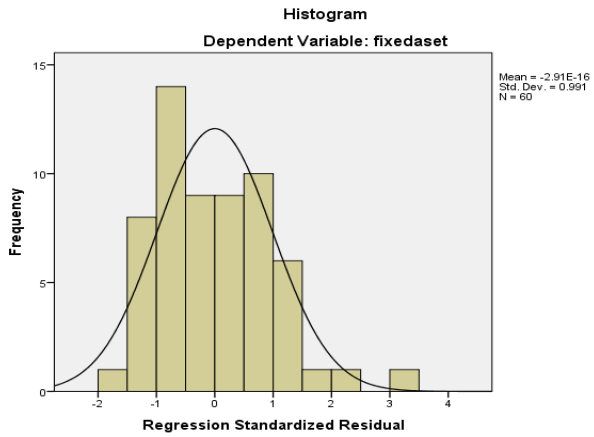

Figure 7 Test of Normalitas Fixed Asset to Total Asset

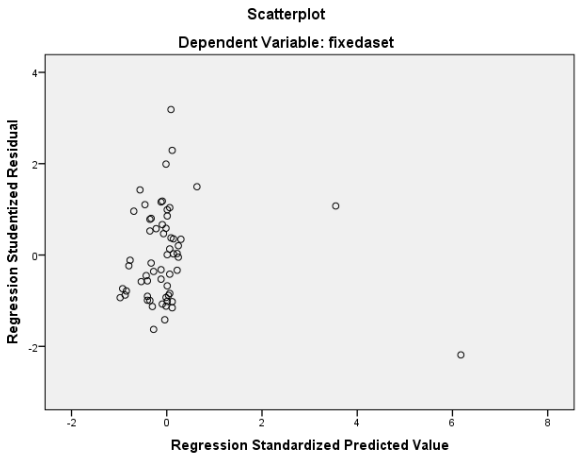

Figure 9. Test of Heteroskedastisitas Fixed Asset to total asset

Based on the results of the scatterplot image that spreads, the data used passed the heteroscedasticity test. The results of the diagram image also show that the data passes the normality test. Thus, Figures 1 to 9 show that the data passes the normality and heteroscedasticity tests thus the data is good and can be used for research testing.

Table 4.2 Results of Regression Test

	Trial 1		**Trial 2**	
Variable	Y1 LnInvestment	Y2 IncometoInvest	Y3 Invest/fixed aset	Y4 fixedaset/totalaset
Constanta	13,619	-24.818	0,308	0,340
Beta	-0,484	0,393	-0,232	0,249
t	-2,8	2,963	-1,812	1,956
Probability t	0,000	0,005	0,075	0,055
Adjusted R Square	0,218	0,137	0,037	0,046
Durbin Watson	1.424	1,938	2,201	2,130
F	14,646	8,779	3,285	3,826
Probability F	0,000	0,005	0,075	0,055

Sources: SPSS processed, 2020 (Variable of Independent: Debt to total asset)

Result of First Trial
Y1(LnInvestasi) = 13,619 – 0,484 DAR + e
Y2 (IncometoInvestasi) = - 24,818 + 0,393 DAR + e
Result of Second Trial
Y3 (Invest/FixedAsset) =0,308 – 0,232 DAR + e
Y4 (FixedAsset/TotalAsset) = 0,340 + 0,249 DAR + e

Based on table 4.2, all data processing trials show significant results, meaning that the debt to total assets (DAR) variable has a significant effect on investment opportunities or the Investment Opportunity set (IOS). However, this significant impact has a different meaning for each different IOS proxy used. Based on trial data processing 1 and 2, the DAR value has a negative impact on the amount of investment, meaning that debt has an impact on reducing the amount of investment. If debt increases, investment decreases. The investment figure is obtained from the amount of investment cash outflow. Furthermore, the effect of debt is in line with the amount of income income but the direction of the curve starts at a negative number due to a loss in the sample of companies. Furthermore, the impact of positive debt on fixed assets means that the greater the debt, the greater the amount of fixed assets. This shows that the company's debt is used to purchase fixed assets.
The dependent variable IOS uses Ln (investment) or the amount of investment value, so the impact of DAR can reduce IOS (Value sig 0,000), meaning that the amount of debt has a bad impact on the amount of investment used by the company. The greater the debt, the lower the investment rate. This result is the same as Sandiar's (2018) research that debt has a negative impact on investment decisions.

The dependent variable IOS uses income to investment so the impact of DAR can increase IOS (sig value

0.005) means that the amount of debt has a good impact on company income. The greater the debt, the higher the company's income so that it means that the company's debt is used for productive and profitable activities.
The dependent variable IOS uses Investment to Fixed Asset, so the impact of DAR can reduce IOS (sig value 0.075), meaning that the amount of debt has a bad impact on the amount of investment used by the company. The greater the debt, the lower the investment rate.
The dependent variable IOS uses Fixed Asset to Total Asset, so the impact of DAR can increase IOS (sig value 0.055) means that the amount of debt has a good impact on company revenue. The greater the debt, the higher the company's income so that it means that the company's debt is used for productive and profitable activities.

Discussion

The effect of corporate debt on investment tends to be negative because companies use debt to increase the company's fixed assets instead of investing cash flow. Productive company fixed assets such as machines or gardens can be used for production so as to increase sales. The results of this study are consistent with the results of previous studies that debt has a negative impact on the amount of investment. Lestari Dan Meliana (2018) found that debt has an impact on reducing investment. Companies prefer the purchase of fixed assets to investment in corporate expansion.

Conclusion

1. The effect of debt on Ln (investment) is negative, meaning that the company's debt reduces the amount of investment.
2. The effect of debt on income to investment is positive, meaning that the debt used can generate profits for the company.
3. The effect of debt on investment to income is negative, meaning that corporate debt reduces the amount of investment that generates income.
4. The effect of debt on fixed assets to total assets is positive, meaning that company debt increases the amount of fixed assets of the company.

Aknowledgement

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